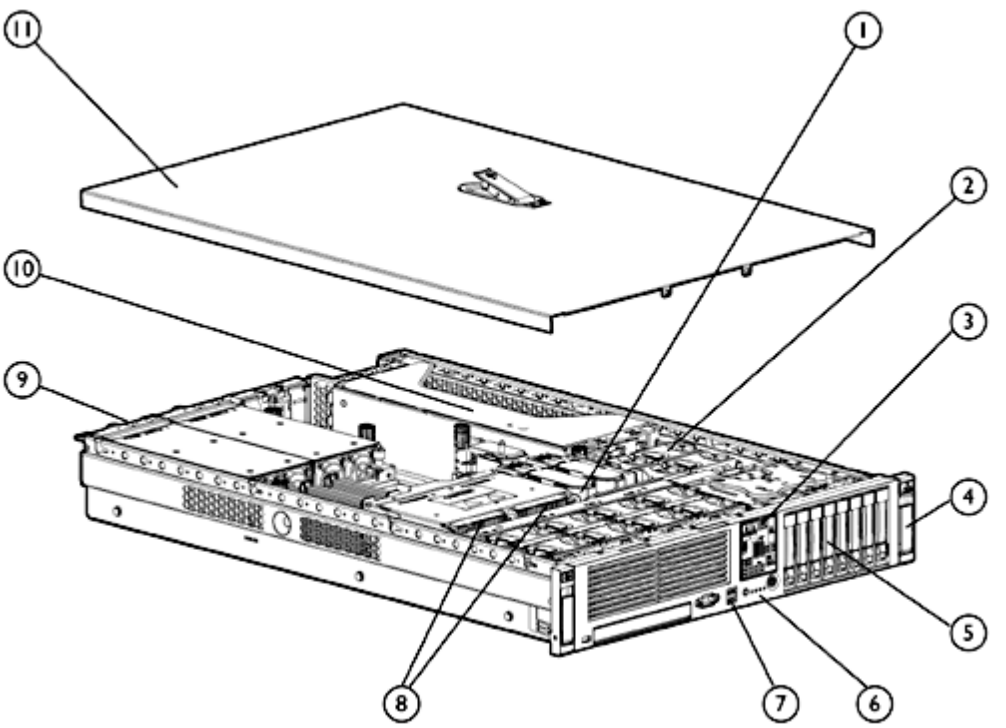
Overview



1. Eight sockets for PC2-5300 Fully Buffered DIMMs (DDR2-667)
2. Hot-plug fans, full redundancy
3. Systems Insight Display
4. Quick release lever for rapid server access
5. Support for eight Small Form Factor hot plug hard drives bays
6. Front LEDs (show server status) and Unit Identification button/LED (for easy in rack server identification)
7. Two front USB ports (2 rear USB ports, 1 internal USB port)
8. Intel Xeon Processor (Performance models include two processors)
9. Hot plug power supply, redundancy option (High performance models include redundant power supply)
10. Three full-size PCI-E non-hot plug expansion slots in standard expansion cage (or optional mixed PCI-X/E expansion cage). Two additional low-profile PCI-E slots embedded on the system board. Four slots available for use; one consumed by Smart Array controller.
11. Quick removal access panel

Overview

What's New

- Intel Xeon Quad-core processors with 1333MHz front-side bus

At A Glance

The HP ProLiant DL380, the world's largest selling server, delivers on its history of design excellence with enterprise-class uptime and manageability, proven 2-way Intel Xeon performance, and 2U density for a variety of rack deployments and applications.

- Processors:
  - Dual-Core and Quad-Core Intel® Xeon™ processors for blazing performance; systems support up to 2 processors (2 processors standard on all Performance models)
  - Preconfigured Performance models save valuable deployment time at a discounted bundle price
  - Intel 5000P chipset
- Memory:
  - Up to 32 GB PC2-5300 Fully Buffered DIMMs (DDR2-667) with 4:1 and 2:1 interleaving available, online spare and mirrored memory capabilities
- Storage Controller:
  - Performance Models: HP Smart Array P400/512MB BBWC Controller (RAID 0/1/1+0/5/6)
  - Base Models: HP Smart Array P400/256MB Controller (RAID 0/1/1+0/5)
  - Entry Models: HP Smart Array E200/64MB Controller (RAID 0/1/1+0)
- Internal Drive Support:
  - (8) small form factor (SFF) hot-plug drive bays to support Serial-attached SCSI (SAS) and Serial ATA (SATA) drives
  - Slimline media bay supporting DVD, CD or Floppy drive
- Network Controller:
  - Dual embedded NC373i Multifunction Gigabit Server Adapters with TCP/IP Offload Engine, including support for Accelerated iSCSI and RDMA through optional ProLiant Essentials Licensing Kits
- Expansion Slots:
  - Four available PCI-Express slots, optional mixed PCI-X / PCI-Express configurations available
- USB Ports:
  - USB 2.0 support
  - 5 total ports: (2) ports up front; (2) ports in back; (1) port internal
- Redundancy:
  - Fully redundant hot plug fans (N+1)
  - Hot plug power supply with optional redundancy (Included in Performance models)
- Management:
  - New Integrated Lights-Out 2 featuring Integrated Remote Console with KVM over IP performance over shared network access
  - HP Power Meter and Power Regulator for ProLiant, delivering integrated power monitoring and server level, policy based power management with industry leading energy efficiency and savings on system power and cooling costs.
  - Automatic Server Recovery (ASR), ROM Based Setup Utility (RBSU), HP System Insight Manager, Status LEDs including system health and UID and SmartStart
  - System Insight Display on the front bezel for quick and easy server diagnostics
- Form Factor:
  - Rack (2U), (3.5-inch); Depth 26 inches (66 cm)
- Deployment/Serviceability:
  - Quick Deploy Rail System includes sliding universal rails, an ambidextrous cable management arm and quick release levers for fast and easy serviceability
  - Tool-less access to all system components for easy in rack serviceability
- Warranty:
  - Protected by HP Services and a worldwide network of resellers and service providers. Three-year Next Business Day, on-site limited global warranty. Certain restrictions and exclusions apply. Pre-Failure Notification on processors, memory, and SAS hard drives. SATA hard drives have a one-year warranty.

Standard Features

NOTE: For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.

Processor One of the following depending on Model	Quad-Core Intel Xeon Processor X5355 (2.66 GHz, 120 Watts, 1333 Front Side Bus (FSB)) Quad-Core Intel Xeon Processor E5345 (2.33 GHz, 80 Watts, 1333 FSB) Quad-Core Intel Xeon Processor E5335 (2.00 GHz, 80 Watts, 1066 FSB) Quad-Core Intel Xeon Processor E5320 (1.86 GHz, 80 Watts, 1066 FSB) Quad-Core Intel Xeon Processor E5310 (1.60 GHz, 80 Watts, 1066 FSB) Dual-Core Intel Xeon Processor 5160 (3.0 GHz, 80 Watts, 1333 FSB) Dual-Core Intel Xeon Processor 5150 (2.66 GHz, 65 Watts, 1333 FSB) Dual-Core Intel Xeon Processor 5148 (2.33 GHz, 40 Watts, 1333 FSB, Low Voltage) Dual-Core Intel Xeon Processor 5140 (2.33 GHz, 65 Watts, 1333 FSB) Dual-Core Intel Xeon Processor 5130 (2.0 GHz, 65 Watts, 1333 FSB) Dual-Core Intel Xeon Processor 5120 (1.86 GHz, 65 Watts, 1066 FSB) Dual-Core Intel Xeon Processor 5110 (1.6 GHz, 65 Watts, 1066 FSB) Dual-Core Intel Xeon Processor 5080 (3.73GHz, 130 Watts, 1066 FSB) Dual-Core Intel Xeon Processor 5060 (3.2GHz, 130 Watts, 1066 FSB) Dual-Core Intel Xeon Processor 5050 (3.0 GHz, 95 Watts, 667 FSB) NOTE: Up to 2 processors supported. Performance configurations include two processors. Mixing different processor models is not supported.
Cache Memory One of the following depending on Model	8MB (2 x 4MB) Level 2 cache (5300 sequence) 4MB (1 x 4MB) Level 2 cache (5100 sequence) 4MB (2 x 2MB) Level 2 cache (5000 sequence)
Chipset	Intel 5000P Chipset NOTE: For more information regarding Intel chipsets, please see the following URL: http://www.intel.com/products/server/chipsets/.
Upgradeability	Upgradeable to 2 processors
Memory Protection	Advanced ECC (multi-bit error protection), Online Spare, Mirroring 4-way Interleaving

Standard Features

Memory

Type	PC2-5300 Fully Buffered DIMMs (DDR2-667) with 4:1 and 2:1 interleaving available (interleaving requires identical DIMMs)
Standard (Entry Models)	1 GB (2 x 512 MB)
Standard (Base Models)	2 GB (2 x 1 GB)
Standard (Performance Models)	4 GB (4 x 1 GB)
Maximum	32 GB (8 x 4 GB)

NOTE: Memory DIMMs in systems with the Front Side Bus (FSB) running at 1333 MHz will run at 667 MHz and in systems with a FSB running at 1066 MHz or 667 MHz the memory DIMMs will run at 533 MHz.

Network Controller

Dual embedded NC373i Multifunction Gigabit Server Adapters with TCP/IP Offload Engine, including support for Accelerated iSCSI and RDMA through optional ProLiant Essentials Licensing Kits

Expansion Slots

Embedded Slots

Slot Number	Bus Speed*	Bus Number**	Device Number***	Hot Plug	PCI Voltage
1	x4 PCIe	6	0	no	N/A
2	x4 PCIe	11	0	no	N/A

NOTE: Embedded slots support half-height low profile cards. For Base and Performance models, the integrated Smart Array P400 (SAS Controller) is installed in Slot 1.

PCIe Riser (Standard)

Slot Number	Bus Speed*	Bus Number**	Device Number***	Hot Plug	PCI Voltage
3	x4 PCIe	14	0	no	N/A
4	x8 PCIe	23	0	no	N/A
5	x8 PCIe	19	0	no	N/A

NOTE: Riser slots support full-size PCIe/PCI-X cards. For Entry model, the standard Smart Array E200 Controller with 64MB Cache (SAS Controller) is installed in Slot 3.

Standard Features

PCIe/PCI-X Riser (Optional)

Slot Number	Bus Speed*	Bus Number**	Device Number***	Hot Plug	PCI Voltage
3	x8 PCIe	23	0	no	N/A
4	64-bit/133MHz PCI-X	18	1	no	3.3 Volt
5	64-bit/133MHz PCI-X	18	2	no	3.3 Volt

NOTE: Server has 5 total slots with 4 slots are available for use; one slot populated by the internal storage controller.
*NOTE: x4 slots support x8 cards, but will run at x4 speeds. x8 slots supports x16 cards, but will run at x8 speeds.
**NOTE: Default bus assignment. Inserting cards with PCI bridges may alter the actual bus assignment number.
***NOTE: Slots are enumerated differently based on OS. MS OS's enumerate from lowest to highest Device ID by bus (starting with the lowest bus).

Storage Controller
One of the following depending on Model

Performance Models:	HP Smart Array P400/512MB BBWC Controller (RAID 0/1/1+0/5/6)
Base Models:	HP Smart Array P400/256MB Controller (RAID 0/1/1+0/5) **Available upgrades**: 512MB battery-backed write cache (BBWC) or standalone battery for RAID 0/1/1+0/5/6
Entry Models:	HP Smart Array E200/64MB Controller (RAID 0/1/1+0) **Available upgrades**: 128MB battery-backed write cache (BBWC) for RAID 0/1/1+0/5

Storage

Diskette Drive	None Standard
Optical Drive One of the following depending on Model	None Standard IDE DVD-ROM/CDRW Combo included on Performance models
Hard Drives	None Standard

Maximum Internal Storage

Hot Plug SAS	1.168TB	8 x 146GB with standard internal hot plug SFF SAS drive cage

Remote Management

Integrated Lights Out 2 (iLO 2) Standard Management:

- Virtual Text Remote Console
- Virtual Power Button Control
- Integrated Remote Console
- Dedicated & full function shared network connectivity
- Embedded system health
- Browser, command line and scripted access
- Automatic IP Configuration via DHCP/DNS/WINS
- Industry Standard 128-bit Secure Sockets Layer (SSL) and Secure Shell security (SSH)
- OS independent hardware health status
- IML and iLO Event Logging
- Support for 12 user accounts with customizable access privilege

Standard Features

Intelligent Manageability	HP Systems Insight Manager SmartStart Management Agent Redundant ROM Remote Flash ROM ROM-Based Setup Utility (RBSU) Integrated Management Log Automatic Server Recovery (ASR) Dynamic Sector Repairing (with Smart Array controller) Drive Parameter Tracking (with Smart Array controller) Hot Spare Boot NOTE: Upon the event of a failed processor in a multi-processing environment, the system will automatically reboot and attempt to use the remaining good processor. Pre-Failure Warranty (covers processors, SAS hard drives and memory)

Interfaces	Serial	1
	Pointing Device (Mouse)	1
	Graphics	1
	Keyboard	1
	VGA	2 (1 front, 1 back)
	Network RJ-45	2
	iLO 2 remote management port	1
	USB 2.0 Ports	5 total: 2 front, 2 back, 1 internal NOTE: Please see the following URL for additional information regarding USB support: http://h18004.www1.hp.com/products/servers/platforms/usb-support.html.

Graphics	Integrated ATI ES1000 1280 x 1024 x 16M color (32MB video standard)

Form Factor	Rack (2U); Height 3.38-inch (8.59 cm); Depth: 26 inches (66 cm)

Standard Features

ProLiant Essentials Foundation Pack Software	HP Systems Insight Manager	HP Systems Insight Manager (HP SIM) provides a unified, secure and extensible environment to centrally manage servers, storage and other infrastructure devices across multiple operating system platforms. Through a single management view, HP SIM provides core management services that include device discovery and identification, event views, health monitoring, inventory data collection, software version control and reporting. HP SIM is built on industry standards and is extensible with value-added ProLiant Essentials, Integrity Essentials and Storage Essentials software to meet individual management needs. For more details on HP SIM visit http://www.hp.com/go/hpsim. HP SIM provides organizations with the following benefits: • Simplifies and consolidates infrastructure lifecycle management using task and query based functionality • Provides the foundation for infrastructure automation and virtualization • Enables IT management based on business processes not hardware platforms • Lowers infrastructure maintenance cost and frees resources for innovation • Maximizes resource utilization with virtualization technologies • Provides a central point of integration between infrastructure and Enterprise management tools such as HP OpenView
	SmartStart	SmartStart simplifies server setup by providing a quick, easy way to deploy reliable and consistent server configurations. For more information, please visit the SmartStart Web site at http://www.hp.com/servers/manage. SmartStart version supported (minimum): SmartStart 7.51
	Insight Management Agents	Insight Management Agents should be installed on all HP servers to present system instrumentation, health and configuration information into HP Systems Insight Manager and the HP System Management Homepage. The HP System Management Homepage aggregates systems data from Insight Management Agents and other HP management tools, providing a consolidated browser-based interface for managing individual servers, Insight Management Agents and The HP System Management Homepage are included on ProLiant Support Packs, and can also be installed using the server profiles provided with the ProLiant Essentials Rapid Deployment Pack. For additional information about the Management Agents and the HP System Management Homepage please visit the management Web site at http://www.hp.com/servers/manage.
	Subscriber's Choice	Subscriber's Choice Driver and Support Alerts/Notifications is a web-based email subscription service that provides automatic delivery of software and driver change notifications for ProLiant products. Sign up at http://www.hp.com/go/subscriberschoice and customize your profile to receive alerts on updates as they become available.
	ROMPaq, support software, and configuration utilities	The latest software, drivers, and firmware fully optimized and tested for your ProLiant server and options Available in SmartStart or downloadable from the Software and Drivers download pages at http://www.hp.com/go/support.

Insight Diagnostics	The most advanced configuration analysis, reporting and troubleshooting utilities used by HP and at your fingertips, available in SmartStart.
Optional ProLiant Essentials Value Packs	Optional software offerings that extend the functionality of an Adaptive Infrastructure to address specific business problems and needs:

- Rapid Deployment Pack (RDP) is an automated deployment and provisioning solution for all ProLiant servers. RDP includes the ProLiant Integration Module featuring ProLiant server pre-configured events for OS installation, and optimized software drivers, firmware and management agents. Every RDP disc includes 7-day, 10-node trial licenses for evaluation purposes. RDP requires a license for each server deployed and is available for purchase with HP servers. For more information, visit: http://www.hp.com/servers/rdp.
- Workload Management Pack – provides easier management of complex environments, improving overall server utilization and enabling Windows 2000 customers for the first time to confidently deploy multiple applications on a single multiprocessor ProLiant Server.
- Performance Management Pack – a performance management solution that identifies and explains hardware performance bottlenecks on ProLiant servers and attached options enabling users to better utilize their valuable resources.
- Intelligent Networking Pack – detects and analyzes network bottlenecks or broken network linkages and steers traffic to the optimum route based on network conditions, plus it provides an extra layer of protection. The virus throttle feature of the solution slows the propagation of fast spreading virus.
- Vulnerability and Patch Management Pack – identifies and remediates software security vulnerabilities due to missing patches as well operating system configurations that can be exploited by viruses, worms, and other blended threats.
- Virtual Machine Management Pack – provides central management and control of virtual machines from Microsoft and VMware. Integrated approach provides the ability to manage both physical and virtual resources from a single management console.
- Server Migration Pack - The Server Migration Pack automates the manual processes required for migrating servers between physical or virtual platforms (P2V, V2P, and V2V).
- Server Migration Pack – P2P Edition: Upgrading or replacing your existing server? Effortlessly transition to new servers with automated, accurate and affordable migration of OS, application and data.
- Accelerated iSCSI Pack – enables the embedded Multifunction network controller to serve as both a NIC and an iSCSI HBA providing access to SAN storage over the same connection used for networking. Processing of the protocol stack is offloaded to the NIC reducing CPU utilization and greatly improving the speed with which the requests are processed and sent to the network.
- Remote Direct Memory Access (RDMA) Pack for Embedded Multifunction Gigabit Server Adapters - provides direct and faster communication between application buffers in separate servers for tasks that involves moving large amounts of data, such as network backups, database read/write, and high performance computing.

Standard Features

Optional Remote Management Packs	• Integrated Lights-Out Advanced Pack - upgrades the iLO 2 processor with comprehensive remote control including Virtual KVM graphical console, virtual media, power management and enterprise security. • Integrated Lights-Out Select Pack - upgrades the iLO 2 processor with virtual media, power management and enterprise security for text console environments. • Insight Power Manager (IPM) - upgrades the single-server remote management capabilities of iLO Select/Advanced to include centralized reporting and policy-based management of power consumption and thermal output provided by the Insight Power Manager. IPM unifies all of this functionality within a single user interface - HP Systems Insight Manager.

NOTE: Flexible and volume quantity license kits are available for ProLiant Essentials Value Packs. Refer to http://www.hp.com/servers/proliantessentials or the various ProLiant Essentials Value Pack product QuickSpecs for more information.
NOTE: For more information regarding ProLiant Essentials Software, please see the following URL: http://www.hp.com/servers/proliantessentials.

Industry Standard Compliance	ACPI 2.0 Compliant PCI 2.2 Compliant WOL Support Microsoft® Logo certifications USB 2.0 Support
Security	Power-on password Keyboard password Diskette drive control Diskette boot control QuickLock, Network Server Mode Parallel and serial interface control Administrator's password Disk configuration lock
Server Power Cords	High voltage power cord ships standard with all part numbers. Localized cables included with geographic specific models in other world regions.
UPS and PDU Power Cord Matrix	Please see the UPS and PDU cable matrix that lists cable descriptions, requirements, and specifications for UPS and PDU units: ftp://ftp.compaq.com/pub/products/servers/ProLiantstorage/power-protection/powercordmatrix.pdf.
Power Supply	800Watt, CE Mark Compliant Optional Hot Plug AC Redundant Power Supply
System Fans	Fully redundant hot plug fans ship standard (N+1).

Standard Features

OS Support

Microsoft Windows Server 2000
Microsoft Windows Server 2003
Novell NetWare
Red Hat Enterprise Linux
SUSE Linux Enterprise Server
SCO UnixWare, OpenServer
VMware Virtualization Software
Solaris 10 32/64-bit

NOTE: For more complete and up-to-date information on how to buy server operating systems from HP please visit the OS product site at: http://h18004.www1.hp.com/products/servers/software/OEM.html.
NOTE: For a more complete and up-to-date listing of supported OSs and versions, please visit our OS Support Matrix at: http://www.hp.com/go/supportos.
NOTE: For an up-to-date listing of the latest drivers available for the HP ProLiant DL380 G5, please see: http://h18023.www1.hp.com/support/files/server/us/index.html.
NOTE: For more Linux OS support & certification information, please visit our the ProLiant & Bladesystem Server Linux matrix: http://h18004.www1.hp.com/products/servers/linux/hpLinuxcert.html
NOTE: For more information on HP's Certified and Supported ProLiant Servers, please visit the VMware Server Support Matrix at:
http://h18004.www1.hp.com/products/servers/software/vmware/hpvmwarecert.html.

Rack Airflow Requirements

Rack 10000 series Cabinets
The increasing power of new high-performance processor technology requires increased cooling efficiency for rack-mounted servers. The 10000 Series Racks provide enhanced airflow for maximum cooling, allowing these racks to be fully loaded with servers using the latest processors.

CAUTION: If a third-party rack is used, observe the following additional requirements to ensure adequate airflow and to prevent damage to the equipment:

- Front and rear doors: If your 42U server rack includes closing front and rear doors, you must allow 830 square inches (5,350 sq cm) of hole evenly distributed from top to bottom to permit adequate airflow (equivalent to the required 64 percent open area for ventilation).
- Side: The clearance between the installed rack component and the side panels of the rack must be a minimum of 2.75 inches (7 cm).

CAUTION: Always use blanking panels to fill all remaining empty front panel U-spaces in the rack. This arrangement ensures proper airflow. Using a rack without blanking panels results in improper cooling that can lead to thermal damage.

NOTE: For additional information, refer to the Setup and Installation Guide or the Documentation CD provided with the server, or to the server documentation located in the Support section at the following URL: http://h18000.www1.hp.com/products/servers/proliantdl380/index.html.

Standard Features

Rack Kit	The HP ProLiant DL380 quick deploy rail system provides tool-free support for racks with square or round mounting holes (including Compaq/HP 7000*, 9000, 10000 and HP series), with an adjustment range of 24" - 36". The ambidextrous cable management arm can be mounted on either the left or right side for improved cable management. NOTE: Cable management arm must be removed to access hot-plug power supplies when the cable management arm is mounted on the right. *NOTE: High Airflow Inserts (High Air Flow Rack Door Insert for the 7142 Rack (single) - PN: 327281-B21; or High Air Flow Rack Door Insert for the 7142 Rack (6-pack) - PN: 327281-B22) are required to support the HP ProLiant DL380 G5 in 7000 series racks. The DL380 G5 Cable Management Arm is not supported on 7000 series racks.
Telco Rack Support	DL380 G5 Telco Rack Kit: Support for all 2-post Telco racks requires the use of the standard rack kit and an additional option kit from Rack Solutions (http://www.racksolutions.com/hp/)
Factory Express Portfolio for Servers and Storage	HP Factory Express offers configuration, customization, integration and deployment services for HP servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed. Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSA1000, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches. For more information on Factory Express services for your specific server model please contact your sales representative or go to http://www.hp.com/go/factory-express.
HP Enterprise Configurator	The HP eCo-Enterprise Configurator now provides factory default racking for our HP hardware portfolio. This approach is aligned with our strategic direction to meet the needs and expectations of our valued customers. If you require "custom" rack configuration, please contact HP's Customer Business Center or an Authorized Partner for assistance. http://www.hp.com/products/configurator.

Standard Features

Service and Support

This product is covered by a global limited warranty and supported by HP Services and a worldwide network of resellers and service providers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Additional support may be covered under the warranty or available for an additional fee. Enhancements to warranty services are available through HP Care Pack services or customized service agreements.

NOTE: Server Warranty includes 3 year Parts, 3 year Labor, 3-year on-site support. Additional information regarding worldwide limited warranty and technical support is available at: http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html

HP Care Pack services include coverage for the HP branded hardware options qualified for the server, purchased at the same time or afterward, internal to the enclosure, as well as 22" and smaller external monitors and tower UPS options up to 3kVA; these items will be covered at the same service level and for the same coverage period as the server. Coverage of UPS Battery is not included, standard warranty terms & conditions apply. For servers or storage systems installed within a rack, service also covers all HP qualified rack options installed within the same rack.

HP services provide continuous care and support expertise with committed response designed to meet your IT and business needs.

To fully capitalizing on your HP ProLiant servers' capabilities requires a service partner who thoroughly understands your server technology and systems environment. HP Services, an industry leader in provision of multi vender support solutions provides a range of support services designed to meet the varying needs of business. Whether an SMB or large global corporation HP has a ProLiant server support offer to help you speedily deploy and maximize system uptime.

Enhanced Care – Minimum recommended service support offer designed to ensure customers have access to expert assistance, whenever they need it.

- *4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years*

Continuous Care – Recommended service delivering cost-effective support options designed to extend HP Services committed response and guaranteed fix times, designed to speed problem identification and resolution.

- *6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years*

Total Care – Highest HP Support service level recommend to help increase IT performance and availability with comprehensive, integrated hardware and software services

- *Support Plus 24 – Onsite HW support 24x7, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays*

Deployment Services – HP Installation and Start Up services designed to take time, risk, and worry out of the deployment of ProLiant servers – and free customers IT support staff to focus on what they do best, their business.

- *Installation & Start-Up of a ProLiant server and Microsoft or Linux O/S per the Customer Description and/or Data Sheet. To be delivered on a scheduled basis 8am-5pm, M-F, excl. HP holidays*

NOTE: For a complete listing of service offerings and information visit:
http://www.hp.com/services/proliantservices
http://www.hp.com/go/proliant/carepack

HPC Interconnects

NOTE: High Performance Computing (HPC) interconnect technologies are available for the DL380 under the Cluster Platform product portfolio. These high-speed interconnects are fully supported by HP when they are part of these configure to order clusters. Solutions can be defined with a lot of flexibility with the help of configuration tools. Please visit the following URL to configure HPC Clusters with InfiniBand, Gigabit Ethernet or Myrinet Interconnects: http://www.hp.com/techservers/clusters/ucp/index.html

HPC Interconnect	InfiniBand	PCI-X and PCI-Express adapters
	Gigabit Ethernet	Use embedded ports
	Myrinet XP	PCI-X Rev D and Rev E adapters

Models

HP DL380 G5 Performance Models **Quad-Core Models** **HP DL380G5 E5345 4G** 433524-xx1 **Dual-Core Models** **HP DL380G5 5160 4G HPM** 418315-xx1 **HP DL380G5 5150 4G HPM** 418314-xx1	**Processor(s)** Two of the following depending on Model	(2) Quad-Core Intel Xeon E5345 Processors (2.33 GHz, 80 Watt, 1333 FSB) (2) Dual-Core Intel Xeon 5160 Processors (3.00 GHz, 80 Watt, 1333 FSB) (2) Dual-Core Intel Xeon 5150 Processors (2.66 GHz, 65 Watt, 1333 FSB)
	Cache Memory	4MB (1 x 4MB) Level 2 cache - Intel Xeon processor 5100 sequence
	Memory	4 GB (4 x 1 GB of PC2-5300 Fully Buffered DIMMs (DDR2-667) with Advanced ECC, mirrored and online spare memory capabilities
	Network Controller	Dual embedded NC373i Multifunction Gigabit Server Adapters
	Storage Controller	HP Smart Array P400/512MB BBWC Controller (RAID 0/1/1+0/5/6)
	Hard Drive	None ship standard
	Internal Storage	1.168TB (with optional hard drives)
	Optical Drive	IDE DVD-ROM/CDRW combo
	Form Factor	Rack (2U), Height 3.38-inch/8.59 cm; Depth: 26 inches (66 cm)
	Availability	Hot Plug Fully Redundant Fans and Power Supplies

HP DL380 G5 Base Models **Quad-Core Models** **HP DL380G5 E5335 2G** 433525-xx1 **HP DL380G5 E5320 2G** 433526-xx1 **Dual-Core Models** **HP DL380G5 5160 2G** 417458-xx1 **HP DL380G5 5150 2G** 417457-xx1 **HP DL380G5 5140 2G** 417456-xx1 **HP DL380G5 5130 2G** 417455-xx1 **HP DL380G5 5060 2G** 397307-xx1	**Processor(s)** One of the following depending on Model	(1) Quad-Core Intel Xeon E5320 Processors (1.86 GHz, 80 Watt, 1066 FSB) (1) Quad-Core Intel Xeon Processor E5335 (2.00 GHz, 80 Watts, 1333 FSB) (1) Dual-Core Intel Xeon 5160 Processors (3.00 GHz, 80 Watt, 1333 FSB) (1) Dual-Core Intel Xeon 5150 Processors (2.66 GHz, 65 Watt, 1333 FSB) (1) Dual-Core Intel Xeon 5140 Processor (2.33 GHz, 65 Watt, 1333 FSB) (1) Dual-Core Intel Xeon 5130 Processor (2.0 GHz, 65 Watt, 1333 FSB) (1) Dual-Core Intel Xeon 5060 Processor (3.2 GHz, 130 Watt, 1066 FSB)
	Cache Memory One of the following depending on Model	8MB (2 x 4MB) Level 2 cache – Intel Xeon processor 5300 sequence 4MB (1 x 4MB) Level 2 cache – Intel Xeon processor 5100 sequence 4MB (2 x 2MB) Level 2 cache – Intel Xeon processor 5000 sequence
	Memory	2 GB (2 x 1 GB) PC2-5300 Fully Buffered DIMMs (DDR2-667) with Advanced ECC, mirrored and online spare memory capabilities
	Network Controller	Dual embedded NC373i Multifunction Gigabit Server Adapters
	Storage Controller	HP Smart Array P400/256MB Controller (RAID 0/1/1+0/5)
	Hard Drive	None ship standard
	Internal Storage	1.168TB (with optional hard drives)
	Optical Drive	Optional DVD, DVD/CD-RW combo, DVD+R/RW or floppy drive
	Form Factor	Rack (2U), Height 3.38-inch/8.59cm; Depth: 26 inches (66 cm)
	Availability	Hot Plug Fully Redundant Fans Standard

Models

HP DL380 G5 Entry Models Quad-Core Models HP DL380G5 E5310 1G 433527-xx1 Dual-Core Models HP DL380G5 5120 1G 417454-xx1 HP DL380G5 5110 1G 417453-xx1	Processor(s) One of the following depending on Model	(1) Quad-Core Intel Xeon E5310 Processor (1.60 GHz, 80 Watt, 1066 FSB) (1) Dual-Core Intel Xeon 5120 Processor (1.87 GHz, 65 Watt, 1066 FSB) (1) Dual-Core Intel Xeon 5110 Processor (1.60 GHz, 65 Watt, 1066 FSB)
	Cache Memory	8MB (2 x 4MB) Level 2 cache - Intel Xeon processor 5300 sequence 4MB (1 x 4MB) Level 2 cache - Intel Xeon processor 5100 sequence
	Memory	1 GB (2 x 512 MB) PC2-5300 Fully Buffered DIMMs (DDR2-667) with Advanced ECC, mirrored and online spare memory capabilities
	Network Controller	Dual embedded NC373i Multifunction Gigabit Server Adapters
	Storage Controller	HP Smart Array E200/64MB Controller (RAID 0/1/1+0)
	Hard Drive	None ship standard
	Internal Storage	1.168TB (with optional hard drives)
	Optical Drive	Optional DVD, DVD/CD-RW combo, DVD+R/RW or floppy drive
	Form Factor	Rack (2U), Height 3.38-inch/8.59cm; Depth: 26 inches (66 cm)
	Availability	Hot Plug Fully Redundant Fans Standard

Country Code Key	XX=00	U.S.
	XX=20	Brazil
	XX=29	Japan
	XX=37	APD
	XX=42	Euro
	XX=AA	PRC

NOTE: For Configure to Order requirements within EMEA region, please consult local Sales Contact.
NOTE: HP does not allow factory integration of options into standard models listed above.
Configure-to-order servers must start with a CTO Chassis.
NOTE: This product offering does not support HP Factory Express Server Configuration Level 1.
NOTE: FIO indicates that this option only available as a Factory Installable Option.

Step 1: Base Configuration (choose one of the following configurable models)

Models	HP ProLiant DL380G5 Rack Chassis	391835-B21
	Factory Integrated Model ships with:	
	(8) SFF Serial Attached SCSI (SAS) Drive Bays Dual embedded NC373i Multifunction Gigabit Server Adapters PCI-Express Riser Cage 800Watt hot plug power supply, CE Mark Compliant One IEC Power cord 12 hot plug fans (fully redundant) Rack (2U), (3.5-inch)	

Step 1A: Choose SAS Controller (must choose only one of the following)

SAS Controllers	P400/256 for DL380 G5/ DL385 G2 FIO NOTE: PCI Express	405160-B21
	P400/512 BBWC for DL380 G5/ DL385 G2 FIO NOTE: PCI Express	405162-B21
	HP Smart Array E200/64MB Controller NOTE: PCI Express	409180-B21
	HP Smart Array E200/128 BBWC Controller NOTE: PCI Express	411508-B21
	HP Smart Array P800/256 BBWC Controller NOTE: PCI Express. SA-P800 Controller supports both internal and external drives.	381513-B21
	Smart Array E200 Controller CTO only	405528-B21
	HP Smart Array 6402/512 FIO Cntrlr	441508-B21

Step 2: Choose Required Options (only one of the following from each list unless otherwise noted)

Configuration Information - Factory Integrated Models (North America only)

Processors	Quad-Core Intel X5355 (2.66 GHz , 120 Watts, 1333 FSB) DL380G5 FIO Kit	437939-L21
	Quad-Core Intel E5345 (2.33 GHz, 80 Watts, 1333 FSB) DL380G5 FIO Kit	437940-L21
	Quad-Core Intel E5335 (2.00 GHz, 80 Watts, 1333 FSB) DL380G5 FIO Kit	437941-L21
	Quad-Core Intel E5320 (1.86 GHz, 80 Watts, 1066 FSB) DL380G5 FIO Kit	433522-L21
	Quad-Core Intel E5310 (1.60 GHz, 80 Watts, 1066 FSB) DL380G5 FIO Kit	437943-L21
	Dual-Core Intel X5160 (3.0 GHz, 80 Watts, 1333 FSB) DL380G5 FIO Kit	418324-L21
	Dual-Core Intel X5150 (2.67 GHz, 65 Watts, 1333 FSB) DL380G5 FIO Kit	418323-L21
	Dual-Core Intel X5148 (2.33 GHz, 40 Watts, 1333 FSB, Low Voltage) DL380G5 FIO Kit	432333-L21
	Dual-Core Intel X5140 (2.33 GHz, 65 Watts, 1333 FSB) DL380G5 FIO Kit	418322-L21
	Dual-Core Intel X5130 (2.0 GHz, 65 Watts, 1333 FSB) DL380G5 FIO Kit	418321-L21
	Dual-Core Intel X5120 (1.86 GHz, 65 Watts, 1066 FSB) DL380G5 FIO Kit	418320-L21
	Dual-Core Intel X5110 (1.6 GHz, 65 Watts, 1066 FSB) DL380G5 FIO Kit	418319-L21
	Dual-Core Intel X5080 (3.73GHz, 130 Watts, 1066 FSB) DL380G5 FIO Kit	412967-L21
	Dual-Core Intel X5060 (3.2GHz, 130 Watts, 1066 FSB) DL380G5 FIO Kit	397328-L21
	Dual-Core Intel X5050 (3.0 GHz, 95 Watts, 667 FSB) DL380G5 FIO Kit	397326-L21
Base Memory	1 GB FBD PC2-5300 2 x 512 MB Kit	397409-B21
	2 GB FBD PC2-5300 2 x 1 GB Kit	397411-B21
	4 GB FBD PC2-5300 2 x 2 GB Kit	397413-B21
	8 GB FBD PC2-5300 2 x 4 GB Kit	397415-B21

Step 3: Choose Additional Options for Factory Integration

Optical Drive	Slimline Ejectable Floppy drive	390164-B21
	HP DVD±R/RW 8X Slim	383975-B21
	Slimline DVD-ROM Drive (8x/24x) Option Kit	264007-B21
	Slimline CD-RW/DVD-ROM Combo Option Kit	331903-B21
Performance Packs	The HP ProLiant DL380 G5 performance packs are necessary to configure a HP ProLiant DL380 G5 Performance Model. HP ProLiant DL380 G5 Performance model includes the latest performance technologies and enterprise class availability features pre-installed for convenience and value. The performance pack includes a 2nd processor and a redundant power supply. NOTE: Must also select 331903-B21 to achieve parity to DL380 G5 High Performance Models.	
	HP DL380G5 X5160 HPM FIO Perf Pack	419812-B21
	HP DL380G5 X5150 HPM FIO Perf Pack	419811-B21

Step 4: Choose Additional Options for Factory Integration

NOTE: For additional options, please refer to the "Options" section below.

NOTE: Some options may not be integrated at the factory. Contact your local sales representative for additional information.

HP ProLiant DL380 G5 Unique Options	Mixed Riser Cage Option Kit (PCI-E/PCI-X)	410570-B21
Redundant Options	Redundant Power Supply 350/370/380 G5 AU Kit	399771-011
	Redundant Power Supply 350/370/380 G5 EU Kit	399771-021
	Redundant Power Supply 350/370/380 G5 JP Kit	399771-291
	Redundant Power Supply 350/370/380 G5 Worldwide Kit	399771-B21
	Redundant Power Supply 350/370/380 G5 UK Kit	399771-031
	Redundant Power Supply 350/370/380 G5 US Kit	399771-001
	Redundant Power Supply 380 G5 Worldwide Kit - 48Volt DC	433634-B21
Power Cords	Nema 5-15P to IEC320-C13, North America low voltage (6 ft/2 m)	AF556A
	Power Cord, Euro, 10A 250 V Straight (12 ft/3.7 m)	157215-021
	Power Cord, UK, 10A 250 V Straight (12 ft/3.7 m)	157216-031
	Power Cord, Danish, 10A 250 V Straight (12 ft/3.7 m)	157218-081
	Power Cord, Swiss, 10A 250 V Straight (12 ft/3.7 m)	157219-111
	Power Cord, Italian, 10A 250 V Straight (12 ft/3.7 m)	157217-061
	Power Cord, South Africa, 10A 250 V Straight (12 ft/3.7 m)	157220-AR1
Processors	Quad-Core Intel Xeon Processor X5355 (2.66 GHz , 120 Watts, 1333 FSB)	437939-B21
	Quad-Core Intel Xeon Processor E5345 (2.33 GHz, 80 Watts, 1333 FSB)	437940-B21
	Quad-Core Intel Xeon Processor E5335 (2.00 GHz, 80 Watts, 1333 FSB)	437941-B21
	Quad-Core Intel Xeon Processor E5320 (1.86 GHz, 80 Watts, 1066 FSB)	433522-B21
	Quad-Core Intel Xeon Processor E5310 (1.60 GHz, 80 Watts, 1066 FSB)	437943-B21
	Dual-Core Intel Xeon Processor 5160 (3.0 GHz, 80 Watts, 1333 FSB)	418324-B21
	Dual-Core Intel Xeon Processor 5150 (2.66 GHz, 65 Watts, 1333 FSB)	418323-B21
	Dual-Core Intel Xeon Processor 5148 (2.33 GHz, 40 Watts, 1333 FSB, Low Voltage)	432333-B21
	Dual-Core Intel Xeon Processor 5140 (2.33 GHz, 65 Watts, 1333 FSB)	418322-B21
	Dual-Core Intel Xeon Processor 5130 (2.0 GHz, 65 Watts, 1333 FSB)	418321-B21
	Dual-Core Intel Xeon Processor 5120 (1.86 GHz, 65 Watts, 1066 FSB)	418320-B21
	Dual-Core Intel Xeon Processor 5110 (1.6 GHz, 65 Watts, 1066 FSB)	418319-B21
	Dual-Core Intel Xeon Processor 5080 (3.73GHz, 130 Watts, 1066 FSB)	412967-B21
	Dual-Core Intel Xeon Processor 5060 (3.2GHz, 130 Watts, 1066 FSB)	397328-B21
	Dual-Core Intel Xeon Processor 5050 (3.0 GHz, 95 Watts, 667 FSB)	397326-B21
Memory (DIMMs)	1 GB FBD PC2-5300 2 x 512 MB Kit	397409-B21
	2 GB FBD PC2-5300 2 x 1 GB Kit	397411-B21
	4 GB FBD PC2-5300 2 x 2 GB Kit	397413-B21
	8 GB FBD PC2-5300 2 x 4 GB Kit	397415-B21

Options

Optical Drives	Slimline CD-RW/DVD-ROM Combo Option Kit NOTE: Included in performance models.	331903-B21
	Slimline DVD-ROM Drive (8x/24x) Option Kit	264007-B21
	HP DVD±R/RW 8X Slim	383975-B21
	Slimline CD-ROM Drive 24X	356963-B21
Diskette Drive	Slimline Ejectable Floppy drive	390164-B21
Hard Drives	**SFF SAS - Hot Plug**	
	HP 146GB 3G SAS 10K SFF SP HDD	431958-B21
	HP 72GB 3G SAS 10K SFF SP HDD	375861-B21
	HP 72GB 3G SAS 15K SFF SP HDD	431935-B21
	HP 36GB 3G SAS 10K SFF SP HDD	375859-B21
	HP 36GB 3G SAS 15K SFF SP HDD	431933-B21
	NOTE: Please see the SAS Hard Drive QuickSpecs for Technical Specifications such as capacity, height, width, interface, transfer rate, seek time, physical configuration, and operating temperature: http://h18000.www1.hp.com/products/quickspecs/12244_div/12244_div.HTML (Worldwide)	
	SFF SATA Hot Plug	
	HP 60GB 1.5G SATA 5.4K SFF HDD	379306-B21
	NOTE: SATA drives have a 1 year warranty. Please see the SATA Hard Drive QuickSpecs for Technical Specifications such as capacity, height, width, interface, transfer rate, seek time, physical configuration, and operating temperature: http://h18000.www1.hp.com/products/quickspecs/12091_div/12091_div.HTML (Worldwide)	
ProLiant Essentials Value Pack Software	**ProLiant Essentials Accelerated iSCSI Pack**	
	ProLiant Essentials Accelerated iSCSI Pack, Single License	407484-B22
	NOTE: For additional Accelerated iSCSI Pack License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12466_div/12466_div.HTML	
	ProLiant Essentials Intelligent Networking Pack	
	ProLiant Essentials Intelligent Networking Pack, Windows Edition, Single Server License NOTE: For use with a single server. Contains one license with a unique license activation key and documentation.	436225-B21
	NOTE: For additional ProLiant Intelligent Networking Pack - Windows License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12062_div/12062_div.HTML	
	ProLiant Essentials Intelligent Networking Pack - Linux Edition, Single Server License	436229-B21
	NOTE: For additional ProLiant Intelligent Networking Pack - Linux License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12327_div/12327_div.HTML	
	ProLiant Essentials Performance Management Pack	

ProLiant Essentials Performance Management Pack, Single-Server License NOTE: This option kit includes 1 license with a unique license activation key. NOTE: The most recent version of the software can always be downloaded at http://www.hp.com/products/pmp. NOTE: For additional ProLiant Performance Management Pack License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11925_div/11925_div.HTML	436770-B21
HP ProLiant Essentials RDMA Pack	
HP ProLiant Essentials RDMA Pack for Embedded Multifunction Gigabit Server Adapters, 1 License	407478-B22
HP ProLiant Essentials RDMA Pack for Standup Multifunction Gigabit Server Adapters, 1 License	407481-B22
NOTE: For additional ProLiant Essentials RDM Pack License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12573_div/12573_div.HTML	
ProLiant Essentials Rapid Deployment Pack	
Rapid Deployment Pack, Single-Server License NOTE: This license allows 1 server to be deployed and managed via RDP.	267196-B21
Rapid Deployment Pack, Single-Server License (Japan) NOTE: This license allows 1 server to be deployed and managed via RDP.	267196-291
ProLiant Essentials Rapid Deployment Pack, Flatpack - single server license	434560-B21
HP ProLiant Essentials Rapid Deployment Pack - Windows Edition 3.50 MEDIA ONLY FLATPACK	434559-B21
NOTE: For additional ProLiant Essentials Rapid Deployment Pack License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11053_div/11053_div.HTML	
ProLiant Essentials Workload Management Pack	
ProLiant Essentials Workload Management Pack, Single Server License	303284-B21
NOTE: For additional ProLiant Workload Management Pack License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11452_div/11452_div.HTML	
ProLiant Essentials Virtualization Management Software	
ProLiant Essentials Virtual Machine Management Pack, Single-Server License NOTE: For use with a single server. Contains one license with a unique license activation key and documentation.	435661-B21
ProLiant Essentials Server Migration Pack, Single-Migration License NOTE: Contains one license, enabling 1 server migration, with a unique license activation key and documentation.	435663-B21
ProLiant Essentials Server Migration Pack - Physical to ProLiant Edition, Single-Migration License	412978-B21
HP ProLiant Essentials Server Migration Pack - Physical to ProLiant Edition. 1 Year Unlimited Migration License	412982-B21
NOTE: This license allows 1 server to be migrated from a physical server to a virtual machine. Or this license can be used to migrate a virtual machine from one virtualization layer i.e. VMware GSX to a different virtualization layer such as VMware ESX or Microsoft Virtual Server 2005. NOTE: For additional ProLiant Essentials Virtualization Management Software License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12328_div/12328_div.HTML	

	ProLiant Essentials Vulnerability and Patch Management Pack	
	ProLiant Essentials Vulnerability and Patch Management Pack, Single-Server License NOTE: For use with a single server. Contains one license with a unique license activation key and documentation. NOTE: For additional ProLiant Vulnerability and Patch Management Pack License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12111_div/12111_div.HTML NOTE: Flexible and volume quantity license kits are available for ProLiant Essentials Value Packs. Refer to http://www.hp.com/servers/proliantessentials or the various ProLiant Essentials Value Pack product QuickSpecs for more information. NOTE: For more information regarding ProLiant Essentials Software, please see the following URL: http://www.hp.com/servers/proliantessentials.	371645-B21
Remote Management	**Integrated Lights-Out Advanced Pack**	
	ProLiant Essentials Integrated Lights-Out Advanced Pack, 1 server Featuring: Sophisticated virtual administration features for ultimate control of servers in the data centers and remote sites. NOTE: For additional Integrated Light-Out Advanced Pack License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11052_na/11052_na.HTML	263825-B21
	Integrated Lights-Out Select Pack	
	Integrated Lights-Out Select Pack, 1 server License Featuring: sophisticated remote control and security features for HP BladeSystem servers and ProLiant ML/DL servers in text console environments. NOTE: For additional Integrated Light-Out Select Pack License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12362_na/12362_na.HTML	413119-B21
	HP Integrated Lights-Out (iLO) Power Management Pack	
	HP iLO Power Management Pack, No Media Single-Server License NOTE: This option kit includes 1 license for iLO Advanced and Insight Power Manager. NOTE: For additional Integrated Lights-Out Power Management Pack License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12632_na/12632_na.HTML	436210-B21
	HP Insight Power Manager (IPM)	
	HP Insight Power Manager Pack, No Media, Single-Server License NOTE: This option kit includes 1 license for Insight Power Manager. NOTE: For additional Insight Power Manager License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12623_na/12623_na.HTML	433691-B21

Options

ProLiant Software Maintenance Subscription	ProLiant Software Maintenance Subscription	355060-B21
	ProLiant Software Maintenance Single Release	356573-B21
	ProLiant Foundation Pack Single Release	356604-B21
	NOTE: Please see the SmartStart QuickSpecs for additional information regarding the subscription purchase: http://h18000.www1.hp.com/products/quickspecs/Division/11073.html (Worldwide)	
Storage Controllers	**SAS Controllers**	
	Smart Array E200 Controller	
	HP Smart Array E200/128 BBWC Controller	411508-B21
	HP Smart Array E200/64MB Controller	409180-B21
	128-MB BBWC (Battery-Backed Write Cache) Enabler NOTE: Supports the Smart Array E200 Controller, Smart Array 641 Controller, and Smart Array 642 Controller.	351580-B21
	Smart Array P400 Controller	
	HP Smart Array P400/256MB Controller	405132-B21
	HP Smart Array P400/512MB BBWC Controller	411064-B21
	512MB Battery-backed cache upgrade NOTE: Contains batter and memory module. For Smart Array P400 Controller.	405148-B21
	Battery-backed write cache upgrade NOTE: Contains battery only. For Smart Array P400 Controller.	383280-B21
	Smart Array P400 Battery Attach Kit NOTE: This option kit contains a 24" battery cable and adhesive material for installing a battery into the HP ProLiant DL380 G5 if a Smart Array P400 is integrated outside of the factory. For all solutions, please refer to the server QuickSpecs and User's Manual for detailed installation instructions.	417836-B21
	Smart Array P600 Controller	
	HP Smart Array P600/256 BBWC Controller NOTE: Requires Mixed PCI-E/X riser cage.	337972-B21
	512 MB Battery-Backed Cache Upgrade NOTE: This 512-MB Battery-Backed Cache Module upgrade kit supports the Smart Array P600 Controller and the Smart Array 6400 series Controller.	372538-B21
	Smart Array P800 Controller	
	HP Smart Array P800/512 BBWC Controller	381513-B21
	NOTE: Please see the following QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12460_div/12460_div.HTML (Smart Array E200 Controller) http://h18000.www1.hp.com/products/quickspecs/12400_div/12400_div.HTML (Smart Array P400 Controller) http://h18000.www1.hp.com/products/quickspecs/12247_div/12247_div.HTML (Smart Array P600 Controller) http://h18000.www1.hp.com/products/quickspecs/12616_div/12616_div.HTML (Smart Array P800 Controller)	
	SAS HBA	
	HP SC44Ge Host Bus Adapter	416096-B21

HP 8 Internal Port SAS HBA with RAID	347786-B21
NOTE: Please see the following QuickSpecs for additional information: http://h18004.www1.hp.com/products/quickspecs/12617_div/12617_div.html (SC44Ge HBA) http://h18004.www1.hp.com/products/quickspecs/12332_div/12332_div.html (SAS HBA)	
SCSI Controllers for External Drive/Storage Support	
NOTE: All Ultra 320 controllers are PCI-X and require the Mixed Riser Cage Option Kit (PCI-E/PCI-X).	
Smart Array 6402/128 Controller NOTE: Ultra320 SCSI.	273915-B21
Smart Array 6404/256 Controller NOTE: Ultra320 SCSI.	273914-B21
Smart Array 642 Controller NOTE: Ultra320 SCSI.	291967-B21
128-MB Battery-Backed Write Cache (BBWC) NOTE: Supports the Smart Array E200 Controller, Smart Array 641 Controller, and Smart Array 642 Controller.	351580-B21
Ultra320 Expansion Module for SA-6402	273911-B21
64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2	374654-B21
SCSI HBA	
HP SC11Xe Host Bus Adapter	412911-B21
NOTE: Please see the following QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/11943_div/11943_div.HTML (Single Channel Ultra320 SCSI HBA) http://h18000.www1.hp.com/products/quickspecs/11587_div/11587_div.HTML (Smart Array 6400 Series) http://h18000.www1.hp.com/products/quickspecs/12069_div/12069_div.HTML (Smart Array 642) http://h18000.www1.hp.com/products/quickspecs/12566_div/12566_div.HTML (SC11Xe HBA)	

Options

Communications	HP NC110T PCI Express Gigabit Server Adapter	434905-B21
	HP NC150T PCI 4-port Gigabit 1000T Combo Switch Adapter	367132-B21
	HP NC310F PCI-X 1000SX Gigabit Server Adapter	368169-B21
	HP NC340T PCI-X 4-port 1000T Gigabit Server Adapter	391661-B21
	HP NC360T PCI Express Dual Port Gigabit Server Adapter	412648-B21
	HP NC373F PCI Express Multifunction Gigabit Server Adapter	394793-B21
	HP NC373T PCI Express Multifunction Gigabit Server Adapter	394791-B21
	HP NC380T PCI Express Dual Port Multifunction Gigabit Server Adapter	394795-B21
	HP NC510F PCIe 10 Gigabit Server Adapter NOTE: A minimum of 1 gigabyte (1 GB) of server memory is required per each NC510F adapter.	414126-B21
	HP NC510C PCIe 10 Gigabit Server Adapter NOTE: A minimum of 1 gigabyte (1 GB) of server memory is required per each NC510C adapter.	414129-B21
	HP IB 4X DDR PCI-e single PORT HCA	431039-B21
	HP IB 4X SDR PCI-e single PORT HCA	431038-B21

Tape Drives

NOTE: For the complete listing of Tape Drive offerings, please see: http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html

For recommended tape drive offerings for this ProLiant server see the following:

USB Tape Drives	
HP StorageWorks 1U USB Rack-Mount Kit with one DAT 72 USB Tape Drive	AG594A
SAS Tape Drives NOTE: Connecting hard drive cage and SAS tape to the same SAS Controller using split cable (supplied with tape drive) deactivates 1 of the hard drive bays. Actual hard drive bay deactivated depends on where split cable plugs into SAS drive connector. Example: 3x SAS cable connector plugged into SAS drive connector (5-8) on the back of the hard drive cage would mean drive bay 8 is deactivated.	
HP StorageWorks Ultrium 448 SAS Internal Tape Drive NOTE: HP recommends combining this tape drive with the 1U SAS Rack-Mount kit (AE459A) for a complete rack-mount solution.	DW085A
HP StorageWorks Ultrium 920 SAS Internal Tape Drive NOTE: HP recommends combining this tape drive with the 1U SAS Rack-Mount kit (AE459A) for a complete rack-mount solution.	EH847A
NOTE: Please refer to the "Tape Drives, Tape Autoloaders & Tape Libraries" table in the Storage section of this document for a list of SAS controllers with tape support.	
Ultrium Tape Drives	
HP StorageWorks Ultrium 232 Internal Tape Drive (Carbonite) NOTE: HP recommends combining this tape drive with the 1U SCSI Rack-Mount kit (A7445B) for a complete rack-mount solution.	DW064A
HP StorageWorks 1U Rack-mount kit with one Ultrium 448 (Carbonite)	DW028B
HP StorageWorks 3U SCSI Rack-mount kit with one Ultrium 460 (Carbon)	350546-B22
HP StorageWorks 1U SCSI Rack-mount kit with one Ultrium 920	EH903A
HP StorageWorks 3U SCSI Rack-mount kit with one Ultrium 960 (Carbonite)	Q1595B

NOTE: Please see the HP StorageWorks Ultrium Tape Drive QuickSpecs for additional options such as controllers, media, and other related items: http://h18006.www1.hp.com/products/quickspecs/11739_div/11739_div.html (Worldwide)
For an up-to-date listing of the latest O/S and software support details for HP Ultrium tape drives, please visit: http://www.hp.com/go/connect.

External DAT Drives

HP StorageWorks DAT 72 SCSI External Tape Drive (Carbon) Q1523B

NOTE: Please see the DAT Tape Drive QuickSpecs for controllers, media, and other options:
http://h18000.www1.hp.com/products/quickspecs/11883_div/11883_div.HTML (Worldwide)
http://h18006.www1.hp.com/products/quickspecs/12128_div/12128_div.html (Worldwide)
For an up-to-date listing of the latest O/S and software support details for HP Ultrium tape drives, please visit: http://www.hp.com/go/connect

DAT Drives

HP StorageWorks DAT 72 SCSI Internal Tape Drive (Carbon) Q1523B

NOTE: HP recommends combining this tape drive with the 1U SCSI Rack-Mount kit (A7445B) for a complete rack-mount solution.

NOTE: Please see the DAT Tape Drive QuickSpecs for controllers, media, and other options:
http://h18000.www1.hp.com/products/quickspecs/11883_div/11883_div.HTML (Worldwide)
For an up-to-date listing of the latest O/S and software support details for HP DAT drives, please visit: http://www.hp.com/go/connect

Rack-Mount Tape Drive Enclosures

HP StorageWorks 1U SCSI Rack-Mount kit A7445B

NOTE: The 1U Rack-Mount Kit can support up to (2) half-height tape drives and is compatible with multiple Single-Ended and LVD SCSI tape drives including the DAT 24, DAT 40, DAT 72, DLT VS80, DLT VS160, Ultrium 215, Ultrium 232, Ultrium 448 and Ultrium 920 tape drives.

HP StorageWorks 1U USB Rack-Mount Kit A8007A

NOTE: The 1U USB Rack-Mount Kit can support up to (2) half-height tape drives and is compatible with the DAT 24 USB, DAT 40 USB and DAT 72 USB tape drives.

HP StorageWorks 1U SAS Rack-Mount Kit AE459A

NOTE: The 1U SAS Rack-Mount Kit can support up to (2) half-height tape drives and is compatible with the Ultrium 448 SAS tape drive.

NOTE: Connecting hard drive cage and SAS tape to the same SAS Controller using split cable (supplied with tape drive) deactivates 1 of the hard drive bays. Actual hard drive bay deactivated depends on where split cable plugs into SAS drive connector. Example: 3x SAS cable connector plugged into SAS drive connector (5-8) on the back of the hard drive cage would mean drive bay 8 is deactivated.

NOTE: Please see the Rack-Mount Tape Drive Kits QuickSpecs for additional information regarding these kits:
http://h18000.www1.hp.com/products/quickspecs/10854_div/10854_div.HTML (Worldwide)

Options

Tape Autoloaders	**HP StorageWorks DAT Autoloader**	
	HP StorageWorks DAT 72x10 tape autoloader	AE313A
	HP StorageWorks 1/8 Tape Autoloader	
	HP StorageWorks 1/8 Ultrium 960 Tape Autoloader	AF204A
	HP StorageWorks 1/8 Ultrium 920 G2 Tape Autoloader	AH165A
	HP StorageWorks 1/8 Ultrium 448 G2 Tape Autoloader	AH164A
	HP StorageWorks 1/8 Ultrium 232 G2 Tape Autoloader	AH163A
	HP StorageWorks 1/8 G2 Tape Autoloader Rack Kit NOTE: Required to install the 1/8 G2 Autoloaders in a standard 19-inch rack; includes rails and rackmount instructions	AH166A
	1/8 Tape Autoloader Rackmount Kit NOTE: Required to install the 1/8 tape autoloader in a standard 19-inch rack.	C9268R
	NOTE: Please reference the Tape Autoloader QuickSpecs at http://www.hp.com/go/automation for additional information needed to create a complete solution; reference current compatibility information at http://www.hp.com/go/ebs	
Tape Libraries	**HP StorageWorks MSL2024 Tape Library**	
	HP StorageWorks MSL2024 1 Ultrium 960 Drive Library	AG115A
	HP StorageWorks MSL2024 1 Ultrium 960 4GB FC Library	AG326B
	HP StorageWorks MSL2024 1 Ultrium 920 Drive Library	AH169A
	HP StorageWorks MSL2024 2 Ultrium 920 Drive Library	AH170A
	HP StorageWorks MSL2024 1 Ultrium 448 Drive Library	AG116A
	HP StorageWorks MSL2024 2 Ultrium 448 Drive Library	AG117A
	HP StorageWorks MSL4048 Tape Library	
	HP StorageWorks MSL4048 1 Ultrium 448 Drive Library	AG320A
	HP StorageWorks MSL4048 2 Ultrium 448 Drive Library	AG321A
	HP StorageWorks MSL4048 1 Ultrium 920 Drive Library	AH171A
	HP StorageWorks MSL4048 2 Ultrium 920 Drive Library	AH172A
	HP StorageWorks MSL4048 1 Ultrium 960 Drive Library	AG322A
	HP StorageWorks MSL4048 1 Ultrium 960 4GB FC Library	AG324B
	HP StorageWorks MSL4048 2 Ultrium 960 Drive Library	AG323A
	HP StorageWorks MSL4048 2 Ultrium 960 4GB FC Library	AG325B
	HP StorageWorks MSL6000 Tape Library	
	Ultrium 960 technology	
	HP StorageWorks MSL6030 1 Ultrium 960 Dr LVDS Library	AD606B
	HP StorageWorks MSL6030 1 Ultrium 960 Dr FC Library	AD608B
	HP StorageWorks MSL6030 2 Ultrium 960 Dr LVDS Library	AD607B
	HP StorageWorks MSL6030 2 Ultrium 960 Dr FC Library	AD609B
	Ultrium 460 technology	
	HP StorageWorks MSL6030 1 Ultrium 460 Dr LVDS Library	AD598B
	HP StorageWorks MSL6030 1 Ultrium 460 Dr FC Library	AD600B
	HP StorageWorks MSL6030 2 Ultrium 460 Dr LVDS Library	AD599B
	HP StorageWorks MSL6030 2 Ultrium 460 Dr FC Library	AD601B

Options

NOTE: Please reference the MSL2024, MSL4048 and MSL6000 Tape Library QuickSpecs at http://www.hp.com/go/automation for additional information needed to create a complete solution; reference current compatibility information at http://www.hp.com/go/ebs

HP Data Protector Express Software	HP DP Express Backup Server Upgrade for ProLiant Software	BB117AP
	HP DP Express Package for Microsoft Small Business Server	BB118AA
	NOTE: To obtain a free licensed copy of HP Data Protector Express for ProLiant edition software, please visit the "Protect Your Data" link accessible from your ProLiant server's System Management Homepage (SMH) software (SmartStart 7.5 or later).	
	NOTE: Please see the HP Data Protector Express QuickSpecs for additional information regarding the purchase of HP Data Protector Express software: http://h18000.www1.hp.com/products/quickspecs/12337_div/12337_div.html (Worldwide)	
Cluster Options	ProLiant Cluster Starter Kit	364023-B22
	NOTE: For additional information regarding the ProLiant Cluster Starter Kit please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11935_div/11935_div.html (Worldwide)	
	HP HA/F200 for Entry SAN Cluster	364026-B22
	NOTE: For additional information regarding the ProLiant Cluster for Entry Level SAN please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11932_div/11932_div.html (Worldwide)	
	NOTE: For configuration/certification options for the HP Parallel Database Cluster for Oracle RAC please go to: http://www.hp.com/solutions/highavailability/oracle	
	HP Serviceguard for Linux ProLiant Cluster A.11.16 for SUSE SLES 9 & 10 and Red Hat EL 3 & 4 (2 node license cluster kit)	305199-B26
	HP Serviceguard for Linux A.11.16 for SUSE SLES 9 & 10 and Red Hat EL 3 & 4 (single license version)	307754-B26
	HP Serviceguard for Linux and Red Hat Global File System - 1 year subscription	T2798AA#001
	HP Serviceguard for Linux and Red Hat Global File System - 3 years subscription	T2798AA#003
	NOTE: For additional information regarding HP Serviceguard for Linux, please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11518_div/11518_div.html (Worldwide)	
	NOTE: For configuration/certification options for HP Serviceguard for Linux please go to: http://www.hp.com/info/sglx	

Options

StorageWorks Options	NOTE: For the complete listing of Fibre Channel Host Bus Adapters for Windows 2000, Windows Server 2003 and Linux, please see: http://h18006.www1.hp.com/storage/saninfrastructure/hba.html	
	HP StorageWorks FC2142SR 4Gb PCI-e HBA	A8002A
	HP StorageWorks FC2242SR Dual Channel 4 Gb PCI-e HBA	A8003A
	HP StorageWorks FC1142SR 4Gb PCI-e HBA	AE311A
	HP StorageWorks FC1242SR Dual Channel 4 Gb PCI-e HBA	AE312A
	HP StorageWorks FC2143 4Gb PCI-X 2.0 -to-Fibre Channel HBA	AD167A
	HP StorageWorks FC2243 Dual Channel 4Gb PCI-X 2.0 HBA	AD168A
	HP StorageWorks FC1143 4Gb PCI-X 2.0 HBA	AB429A
	HP StorageWorks FC1243 Dual Channel 4Gb PCI-X 2.0 HBA	AE369A
HP StorageWorks Modular Smart Array 20	HP StorageWorks Modular Smart Array 20 NOTE: Rack-mountable 12 (SATA) drive enclosure with U320 Host connectivity, redundant power supplies.	335921-B21
	HP StorageWorks Modular Smart Array 20 Starter Kit NOTE: Rack-mountable 12 (SATA) drive enclosure with U320 Host connectivity, redundant power supplies. Includes Smart Array 6402/128 Controller. NOTE: The Modular Smart Array Enclosure 20 Family supports the SATA 1.5Gb/s 3.5" Hot Plug Hard Drives.	366172-B21
HP StorageWorks Modular Smart Array 30	HP StorageWorks Modular Smart Array 30 SB NOTE: Rack-mountable 14 drive enclosure with single bus, redundant power supplies	302969-B21
	HP StorageWorks Modular Smart Array 30 DB NOTE: Rack-mountable 14 drive enclosure with dual bus, redundant power supplies NOTE: The Modular Smart Array Enclosure 30 Family supports the Wide Ultra3, Ultra320 Hot Plug Hard Drives.	302970-B21
HP StorageWorks Modular Smart Array 50	HP StorageWorks Modular Smart Array 50 Enclosure NOTE: Please see the Modular Smart Array 50 QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: http://h18000.www1.hp.com/products/quickspecs/12245_div/12245_div.HTML (Worldwide)	364430-B21
HP StorageWorks Modular Smart Array 500 G2	HP StorageWorks Modular Smart Array 500 Generation 2 NOTE: Please see the Modular Smart Array 500 Generation 2 QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: http://h18000.www1.hp.com/products/quickspecs/11956_div/11956_div.HTML (Worldwide)	335880-B21

Options

HP StorageWorks Modular Smart Array 1000	HP StorageWorks Modular Smart Array 1000 NOTE: Please see the Modular Smart Array 1000 QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/11033_div/11033_div.HTML (Worldwide)	201723-B22
HP StorageWorks Modular Smart Array 1500 cs	Modular Smart Array 1500 Controller Shelf NOTE: Please see the StorageWorks Modular SAN Array 1500 cs QuickSpecs for additional options and configuration information at: http://www.hp.com/go/MSA1500cs	AA986A
Uninterruptible Power Systems - Rack	HP R1.5 VA 1U UPS INTL	AF418A
	HP R1.5 VA 1U UPS JPN	AF421A
	HP R1.5 VA 1U UPS NA	AF419A
	HP R/T2200 2-U ERM	AF412A
HP Monitored Power Distribution Unit (PDU)	**HP Monitored Power Distribution Unit: Full Rack Version**	
	17.3 kVA Monitored PDU Model S2324	AF503A
	8.6 kVA Monitored PDU Model S1324	AF504A
	16.6 kVA Monitored PDU Model S2140	AF505A
	8.3 kVA Monitored PDU Model S1140	AF506A
	22 kVA Monitored PDU Model S2316	AF507A
	11 kVA Monitored PDU Model S1316	AF508A
	14.7 kVA Monitored PDU Model S2132	AF509A
	7.3 kVA Monitored PDU Model S1132	AF510A
	4.9kVA Monitored PDU model S124	AF514A
	7.3kVA Monitored PDU model S132	AF515A
USB Options	HP USB 2-Button Optical Scroll Mouse (Carbonite/Silver)	DC172B
	HP USB 04 Standard Keyboard	DT528A#xxx
	USB 2.0 4-port HUB	DG954A
	HP 1GB Drive Key II- USB 2.0 Flash Drive	AG382AA
	HP 512MB DriveKey II- USB Flash Drive	ED516AA

Options

HP Rack 5000 Series (Graphite Metallic)	HP 5642 Rack-Unassembled	358254-B21
	NOTE: Please see the HP Rack 5642 QuickSpecs for additional part numbers and Technical Specifications such as height, width, depth, weight, and color: http://h18000.www1.hp.com/products/quickspecs/12074_div/12074_div.HTML (Worldwide)	
	NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.	
HP Rack 10000 G2 Series (Carbon/Graphite Metallic)	10642 G2 (42U) Rack Cabinet - Pallet	AF001A
	10642 G2 (42U) Rack Cabinet - Shock Pallet	AF002A
	10642 G2 (42U) Rack Cabinet - Crated	AF003A
	10642 G2 (42U) Rack Cabinet, with Extension - Shock Pallet	AF004A
	10636 G2 (36U) Rack Cabinet - Pallet	AF011A
	10636 G2 (36U) Rack Cabinet - Shock Pallet	AF012A
	10636 G2 (36U) Rack Cabinet - Crated	AF013A
	10636 G2 (36U) Rack Cabinet, with Extension - Shock Pallet	AF014A
	10622 G2 (22U) Rack Cabinet - Pallet	AF021A
	10622 G2 (22U) Rack Cabinet - Shock Pallet	AF022A
	10842 G2 (42U) 800mm Wide Rack Cabinet - Pallet	AF041A
	10842 G2 (42U) 800mm Wide Rack Cabinet - Shock Pallet	AF042A
	10647 G2 (47U) Rack Cabinet - Pallet	AF031A
	NOTE: It is mandatory to use a shock pallet when shipping racks with equipment installed.	
	NOTE: Please see the Rack 10000 G2 QuickSpecs for Technical Specifications such as height, width, depth, weight, and color: http://h18000.www1.hp.com/products/quickspecs/12402_div/12402_div.HTML (Worldwide)	
	NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.	
HP Rack 10000 Series (Graphite Metallic)	HP S10614 (14U) Rack Cabinet - Shock Pallet	292302-B22
	HP 10842 (42U) Rack Cabinet - Pallet	257415-B21
	HP 10842 (42U) Rack Cabinet - Shock Pallet	257415-B22
	HP 10647 (47U) Rack Cabinet - Pallet	245160-B21
	HP 10647 (47U) Rack Cabinet - Crated	245160-B23
	HP 10622 (22U) Rack Cabinet - Pallet	245163-B21
	HP 10622 (22U) Rack Cabinet - Shock Pallet	245163-B22
	HP 10622 (22U) Rack Cabinet - Crated	245163-B23
	NOTE: xxxxxx-B21 (pallet) used to ship empty racks shipped on a truck. -B22 (shock pallet) used to ship racks with equipment installed (by custom systems, VARs and Channels). xxxxxx-B23 (crated) used for air shipments of empty racks.	
	NOTE: It is mandatory to use a shock pallet in order to ship racks with equipment installed. Not all Compaq equipment is qualified to be shipped in the Rack 10000 series.	

NOTE: Please see the Rack 10000 QuickSpecs for Technical Specifications such as height, width, depth, weight, and color: http://h18000.www1.hp.com/products/quickspecs/10995_div/10995_div.HTML (Worldwide)

NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower

Keyboards and Monitors	TFT7210R Rack Mounted 17" Monitor	348373-B21
	TFT7600 Rackmount Keyboard Monitor US	AG052A
	TFT7600 Rackmount Keyboard Monitor UK	AG053A
	TFT7600 Rackmount Keyboard Monitor GR	AG054A
	TFT7600 Rackmount Keyboard Monitor FR	AG055A
	TFT7600 Rackmount Keyboard Monitor IT	AG056A
	TFT7600 Rackmount Keyboard Monitor SP	AG057A
	TFT7600 Rackmount Keyboard Monitor DEN	AG058A
	TFT7600 Rackmount Keyboard Monitor NOR	AG059A
	TFT7600 Rackmount Keyboard Monitor SE/FI	AG060A
	TFT7600 Rackmount Keyboard Monitor SWI	AG061A
	TFT7600 Rackmount Keyboard Monitor PORT	AG062A
	TFT7600 Rackmount Keyboard Monitor BEL	AG063A
	TFT7600 Rackmount Keyboard Monitor JPN2	AG064A
	TFT7600 Rackmount Keyboard Monitor RUS	AG065A
	TFT7600 Rackmount Keyboard Monitor INTL	AG066A
	1U Rackmount Keyboard with USB, US	AG072A
	1U Rackmount Keyboard with USB, UK	AG073A
	1U Rackmount Keyboard with USB, GR	AG074A
	1U Rackmount Keyboard with USB, FR	AG075A
	1U Rackmount Keyboard with USB, ITL	AG076A
	1U Rackmount Keyboard with USB, SP	AG077A
	1U Rackmount Keyboard with USB, DEN	AG078A
	1U Rackmount Keyboard with USB, NOR	AG079A
	1U Rackmount Keyboard with USB, SE/FI	AG080A
	1U Rackmount Keyboard with USB, SWI	AG081A
	1U Rackmount Keyboard with USB, PORT	AG082A
	1U Rackmount Keyboard with USB, BEL	AG083A
	1U Rackmount Keyboard with USB, JPN2	AG084A
	1U Rackmount Keyboard with USB, RUS	AG085A
	1U Rackmount Keyboard with USB, INTL	AG086A

NOTE: For additional information regarding Rack Options, please see the following URL: http://www.hp.com/go/rackandpower.

Options

HP KVM Switch Options	2x1x16 IP Console Switch with Virtual Media	AF601A
	4x1x16 IP Console Switch with Virtual Media	AF602A
	2x16 Server Console Switch with Virtual Media	AF600A
	PS/2 Virtual Media Interface Adapter, 1 pack NOTE: Requires PS/2 and one USB port on server.	AF604A
	Server Console Switch (KVM), 0 x 1 x 8 port	336044-B21
	Server Console Switch (KVM), 0 x 2 x 16 port	336045-B21
	PS/2 Interface Adapter, 1 pack	262588-B21
	PS/2 Interface Adapter, 8 pack	262587-B21
	USB Interface Adapter, 1 pack	336047-B21
	Serial Interface adapter - 1 Pack with power supply	373035-B21
	NOTE: Cat5e cables are required to connect Interface Adapters to Console Switches. Cat5e cables can be found at the following URL: http://www.hp.com/go/kvm.	
	HP 1x 4 USB/PS2 KVM Switch, RM (ALL)	371302-B21
	NOTE: For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: http://www.hp.com/go/kvm.	

HP Serial Console Server Options	HP 16 Port Serial Console Server (worldwide)	AF101A
	HP 48 Port Serial Console Server (worldwide)	AF102A
	Serial Adapter, RJ45-DB9 DCE Female, 1 Pack	AF103A
	Serial Adapter, RJ45-DB9 DCE Female, 8 Pack	AF110A
	NOTE: Cat5e cables are required to connect Serial Adapters to Serial Console Servers. Additional Serial Adapters and Cat5e cables can be found at the following URL: http://www.hp.com/go/kvm.	
	NOTE: For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: http://www.hp.com/go/kvm.	

Service and Support Offerings (HP Care Pack Services)	**Hardware Services On-site Service**	
	4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic	U4544E
	4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	U4545E
	Hardware Services 6-Hour Call to Repair On-site Service	
	6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	U4546E
	Installation & Start-up Services	
	Hardware Installation, Electronic	U4554E
	Installation & Start-Up of a ProLiant server and Microsoft or Linux O/S per the Customer Description and/or Data Sheet. To be delivered on a scheduled basis 8am-5pm, M-F, excl. HP holidays, Electronic	U4555E
	Installation and Startup for Essentials Rapid Deployment Pack, Electronic	U5683E

Support Plus

Onsite HW support, 8am-9pm, M-F, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 8am-9pm, M-F 2hr response time excl. HP holidays, Electronic	U4556E

Support Plus 24

Onsite HW support 24x7, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	U4557E
Onsite HW support 24x7, 4hr response and SuSE Linux SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	U6312E
Onsite HW support 24x7, 4hr response and Red Hat ES Linux SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	U8334E

NOTE: For more information, customer/resellers can contact http://www.hp.com/services/carepack

NOTE: Memory configurations listed do not apply to "Factory Integrated Models".

Standard Memory

2 GB PC2-5300 Fully Buffered DIMMs (DDR2-667) (2 x 1 GB)

Upgrading Memory and Memory Interleaving

When upgrading memory, DIMMs 1A and 2A must match. DIMMs 3B and 4B, DIMMs 5C and 6C, and DIMMs 7D and 8D must match and must be installed as a pair. When DIMMs 1A and 2A are populated the system is automatically configured for 2:1 interleaving. When all 4 banks are populated the system is automatically configured for 4:1 interleaving. When four, six, or eight DIMMs are populated with identical DIMMs the system is automatically configured for bank interleaving.

Standard Memory Plus Optional Memory

Up to 14 GB memory is available with the standard memory of 2 GB and the optional installation PC2-5300 Fully Buffered DIMMs (DDR2-667) memory kits.

Standard Memory Replaced with Optional Memory

Up to 32 GB of memory is available with the removal of the standard 1 GB of memory and the optional installation of PC2-5300 Fully Buffered DIMMs (DDR2-667) memory kits.

NOTE: Chart does not represent all possible configurations.

Memory		Slot							
		1	2	3	4	5	6	7	8
Standard	2 GB	1 GB	1 GB	Empty	Empty	Empty	Empty	Empty	Empty
Optional	14 GB	1 GB	1 GB	2 GB	2 GB	2 GB	2 GB	2 GB	2 GB
Maximum	32 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB

NOTE: In the online spare configuration, the ROM automatically configures the last populated bank as the spare memory. If only banks A and B are populated, bank B is the spare bank. If banks A, B, and C are populated, bank C is the spare bank, Online spare memory is configured through RBSU.

NOTE: Mirrored Memory uses mirrored banks to provide a high level of memory redundancy. Customer chooses to implement or not: User selectable via BIOS and default is off.

Following are memory options available from HP:

1 GB FBD PC2-5300 2 x 512 MB Kit	397409-B21
2 GB FBD PC2-5300 2 x 1 GB Kit	397411-B21
4 GB FBD PC2-5300 2 x 2 GB Kit	397413-B21
8 GB FBD PC2-5300 2 x 4 GB Kit	397415-B21

In Advanced ECC mode, FBDIMMs must be populated as specified in the following table:

Configuration	Bank A 1A and 3A	Bank B 5B and 7B	Bank C 2C and 4C	Bank D 6D and 8D
1	X	-	-	-
2	X	X	-	-
3	X	X	X	-
4	X	X	X	X

Memory

Online spare memory configuration

Online spare FBDIMM configuration requirements (in addition to general configuration requirements):

- When only bank A is being used, it must be fully populated with dual-rank FBDIMMs.
- If banks A and C are being used, they must be fully populated.
- If installed, bank A and bank C must contain FBDIMMs with identical part numbers.
- If installed, bank B and bank D must also contain FBDIMMs with identical part numbers.

In online spare mode, FBDIMMs must be populated as specified in the following table:

Configuration	Branch 0 Bank A 1A and 3A	Branch 0 Bank C 2C and 4C	Branch 1 Bank B 5B and 7B	Branch 1 Bank D 6D and 8D
1*	X	-	-	-
2	X	X	-	-
3	X	X	X	X

*NOTE: Configuration 1 is only supported if using bank A, populated with dual-rank FBDIMMs. All FBDIMMs 1GB and above are dual-rank.
After installing FBDIMMs, use RBSU to configure the system for online spare memory support ("Configuring online spare memory" on page 57).

Mirrored memory configuration

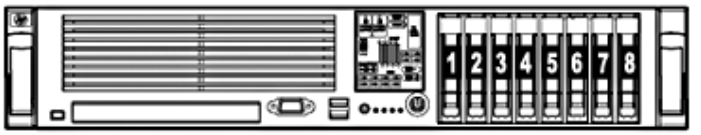
Mirrored memory FBDIMM configuration requirements (in addition to general configuration requirements):

- Banks A and B must be fully populated.
- Bank A and bank B must contain FBDIMMs with identical part numbers. If installed, bank C and bank D must also contain FBDIMMs with identical part numbers.

When using mirrored memory mode, FBDIMMs must be populated as specified in the following table:

Configuration	Bank A 1A and 3A	Bank B 5B and 7B	Bank C 2C and 4C	Bank D 6D and 8D
1	X	X	-	-
2	X	X	X	X

NOTE: After installing FBDIMMs, use RBSU to configure the system for mirrored memory support ("Configuring mirrored memory" on page 57).



1-8 Eight SFF SAS hot plug hard drive bays

Drive Support

	Quantity Supported	Position Supported	Controller
Removable Media			
1.44-MB Diskette Drive	Only 1 available removable media bay	Slimline bay	Integrated diskette NOTE: Optional
Slimline CD-RW/DVD-ROM Combo Option Kit NOTE: Included in performance models.	Only 1 available removable media bay	Slimline bay	Integrated IDE NOTE: Optional
Slimline DVD-ROM Drive (8x/24x) Option Kit	Only 1 available removable media bay	Slimline bay	Integrated IDE NOTE: Optional
HP ProLiant Slim CD-ROM x24	Only 1 available removable media bay	Slimline bay	Integrated IDE NOTE: Optional
HP DVD±R/RW 8X Slim	Only 1 available removable media bay	Slimline bay	Integrated IDE NOTE: Optional

Hard Drives

SFF SAS - Hot Plug Drives

	Quantity Supported	Position Supported	Controller
146GB 3G SAS 10K SP 72GB 3G SAS 10K SP 72GB 3G SAS 15K SP 36GB 3G SAS 10K SP 36GB 3G SAS 15K SP	Up to 8	1-8	HP Smart Array E200/64MB Controller HP Smart Array E200/128 BBWC Controller HP Smart Array P400/256MB Controller HP Smart Array P400/512MB BBWC Controller HP Smart Array P600/256 BBWC Controller NOTE: Optional mixed PCI-X/E required for SA-P600. HP Smart Array P800/512 BBWC Controller

SATA - Hot Plug Drives

	Quantity Supported	Position Supported	Controller

Storage

60GB 1.5G SATA 5.4K	Up to 8	1-8	HP Smart Array E200/64MB Controller HP Smart Array E200/128 BBWC Controller HP Smart Array P400/256MB Controller HP Smart Array P400/512MB BBWC Controller HP Smart Array P600/256 BBWC Controller NOTE: Optional mixed PCI-X/E required for SA-P600. HP Smart Array P800/512 BBWC Controller

External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
Modular Smart Array 20 Family	1 per SCSI VHDCI connector	External	Smart Array 6402/128 Controller Smart Array 6404/256 Controller NOTE: Optional mixed PCI-X/E cage required.
Modular Smart Array 50 Enclosure	2 per connector (supports 1+1 cascading)	External	HP Smart Array P600/256 BBWC Controller NOTE: Optional mixed PCI-X/E cage required.
Modular Smart Array 500 G2	1 per SCSI	External	Please see the Modular Smart Array 500 or 500 G2 QuickSpecs for the latest list of supported HBAs: http://www.hp.com/go/msa500.

Modular Smart Array 1000: http://h18000.www1.hp.com/products/quickspecs/11033_div/11033_div.HTML (Worldwide)
Modular Smart Array 1500 cs: http://www.hp.com/go/MSA1500cs

Maximum Storage Capacity - (with MSA50)

Internal	1.168TB (8 x 146GB SAS SFF)
External	2.920TB (20 x 146GB SAS SFF)
Total	4.088TB

Tape Drives, Tape Autoloaders, & Tape Libraries

NOTE: For an up-to-date listing of the latest O/S Support details for each of the Tape Drives listed below, please see the following: http://h18000.www1.hp.com/products/quickspecs/Division/10233.html (Worldwide)

NOTE: For an up-to-date listing of the latest O/S Support details for each of the Tape Autoloaders & Tape Libraries listed below, please see the following: http://h18000.www1.hp.com/products/quickspecs/Division/10809.html (Worldwide)

NOTE: SAS Tape Drives: Connecting hard drive cage and SAS tape to the same SAS Controller using split cable (supplied with tape drive) deactivates 1 of the hard drive bays. Actual hard drive bay deactivated depends on where split cable plugs into SAS drive connector. Example: 3x SAS cable connector plugged into SAS drive connector (5-8) on the back of the hard drive cage would mean drive bay 8 is deactivated.

NOTE: For complete listing of tape drive offerings see
http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html
For recommended tape drive offerings for this ProLiant server see the following:

	Position Supported	Controller	Part Number

Storage

HP StorageWorks Tape Drives, External Ultrium 232 Ultrium 448 Ultrium 460 Ultrium 960 Ultrium 920 DAT 40 DAT 72 DLT VS160 SDLT 320 SDLT 600	External	HP SC11Xe Host Bus Adapter	412911-B21
HP StorageWorks Tape Drives, External DAT 24 USB DAT 40 USB DAT 72 USB	External	USB 2.0 Port	N/A
HP StorageWorks Tape Drives, SCSI External Ultrium 232 Ultrium 448 Ultrium 460 Ultrium 920 Ultrium 960 DAT 40 DAT 72 DLT VS80 DLT VS160 SDLT 320 SDLT 600	External	HP SC11Xe Host Bus Adapter	412911-B21
HP StorageWorks Tape Drives, SAS External Ultrium 448 SAS Ultrium 920 SAS	External	HP 8 Internal Port SAS HBA with RAID 0/1 NOTE: Please visit http://www.hp.com/go/connect for details about minimum SAS controller firmware version and SAS cabling requirements.	347786-B21
HP StorageWorks Autoloaders, External DAT 72x10 Autoloader 1/8 G2 Tape Autoloader	External	HP SC11Xe Host Bus Adapter	412911-B21
HP StorageWorks SCSI Rack-Mount Tape Drive Enclosures 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP SC11Xe Host Bus Adapter	412911-B21

Storage

HP StorageWorks SAS Rack-Mount Tape Drive Enclosures 1U Rack-Mount Kit	External	HP 8 Internal Port SAS HBA with RAID 0/1 NOTE: Mixed Riser Cage Option (410570-B21) required to connect the SAS HBA. NOTE: Please visit http://www.hp.com/go/connect for details about minimum SAS controller firmware version and SAS cabling requirements.	347786-B21
HP StorageWorks USB Rack-Mount Tape Drive Enclosures 1U Rack-Mount Kit	External	USB 2.0 Port	N/A
HP StorageWorks SAS Rack-Mount Tape Drive Enclosures 1U Rack-Mount Kit	External	HP 8 Internal Port SAS HBA with RAID 0/1 NOTE: Please visit http://www.hp.com/go/connect for details about minimum SAS controller firmware version and SAS cabling requirements.	347786-B21
HP StorageWorks Tape Libraries, External MSL2024 (Ultrium 448, Ultrium 920 and 960-based) MSL4048 (Ultrium 448, Ultrium 920 and 960-based) MSL6000 (Ultrium 960 and 460-based) MSL6000 (SDLT 600-based)	External	Please consult the EBS connectivity matrix at http://www.hp.com/go/ebs for detailed connectivity information	N/A

Power Specifications

Power Supply Specification - AC	Part number		380622-001			
	Spare Kit		403781-001			
Operational Input Voltage Range (Vrms)	90 to 264					
Frequency Range (Nominal) (Hz)	47 to 63 (50/60)					
Nominal Input Voltage (Vrms)	100	120	208	220	230	240
Max Rated Output Wattage Rating	800	850	1000	1000	1000	1000
Nominal Input Current (A rms)	10.0	8.8	5.85	5.5	5.2	4.97
Max Rated Input Wattage Rating (Watts)	980	1035	1193	1186	1172	1169
Max. Rated VA (Volt-Amp)	1000	1056	1217	1210	1196	1193
Efficiency (%)	81.5	82	84	84	85	85.5
Power Factor	0.98	0.98	0.98	0.98	0.98	0.98
Leakage Current (mA)	0.44	0.52	0.91	0.96	1.00	1.04
Max. Inrush Current (A peak)	30	30	30	30	30	30
Max. Inrush Current duration (mS)	3	3	3	3	3	3

Power Supply Specification - DC	Part number		433634-B21
	Spare Kit		419613-001
Operational Input Voltage Range (Vrms)	-36.0 to -72.0V DC		
Frequency Range (Nominal) (Hz)	DC		
Nominal Input Voltage (Vrms)	36	48	72
Max Rated Output Wattage Rating	1210	1210	1210
Nominal Input Current (A rms)	38	29	20
Max Rated Input Wattage Rating (Watts)	1368	1392	1440
Efficiency (%)	87.6	87.6	86
Max. Inrush Current (A peak)	60	60	60
Max. Inrush Current duration (mS)	100	100	100

NOTES:

- To review typical system power ratings use the Active Answers Power Calculator which is available via the online tool located at url: http://h30099.www3.hp.com/configurator/calc/Power%20Calculator%20Catalog.xls

To drill down to calculators:

- Click on: "ProLiant Servers"
- Click on the Server of interest. Example: DL380 G5
- Click on: "Power Calculator" link. (You may need to scroll down to see it)

System Unit	**Dimensions** (HxWxD) (with feet/bezel)	3.38 x 17.54 x 26.01 in (8.59 x 44.54 x 66.07 cm)	
	Weight (approximate)	Maximum	60 lb (27.22 kg)
		Minimum	47.18 lb (20.41 kg)
	Input Requirements (per power supply)	Rated Line Voltage	100-132 VAC, 200-240 VAC
		Rated Input Current	10A (100VAC), 10A (120VAC), 6.1A (200VAC)
		Rated Input Frequency	50 to 60 Hz
		Rated Input Power	1000/1056/1205 W
	BTU Rating	BTU/HR	3490/3680/4150
	Power Specifications	To review typical system power ratings use the Active Answers Power Calculator which is available via the online tool located at URL: http://h30099.www3.hp.com/configurator/powercalcs.asp. To drill down to calculators: - Click on: "ProLiant Servers" - Click on the Server of interest. Example: DL380 G5 - Click on: "Power Calculator" link. (You may need to scroll down to see it.)	
	Power Supply Output Power (per power supply)	Rated Steady-State Power	800/850/1000 W
		Maximum Peak Power	800/850/1000 W
	Temperature Range	Operating	50° to 95° F (10° to 35° C) at sea level with an altitude de-rating of 1.8° F per 1000 ft (1.0° C per 304.8 m) to 10,000 ft (3048 m) no direct sunlight allowed. Maximum rate of change is 18° F/Hr (10° C/Hr). Upper operating limit is 10,000 ft (3,048 m) or 70 Kpa/10.1 psia. System performance may be reduced if operating with a fan fault or above 30° C.
		Non-operating	-22° to 140° F (-30° to 60° C) Maximum rate of change is36° F/Hr (20° C/Hr). Upper non-operating limit is 30,000 ft (9,144 m) or 30.3KPa/4.4 psia.
	Maximum Wet Bulb Temperature	101.7° F (38.7° C)	
	Relative Humidity (non-condensing)	Operating	10% to 90% relative humidity (Rh), 28° C maximum wet bulb temperature.
		Non-operating	5% to 95% relative humidity (Rh), 38.7° C maximum wet bulb temperature.
	Acoustic Noise	Idle Minimum (Fixed Disk Drives Spinning)	
		L WAd (BELS)	6.1
		L pAm (dBA)	44
		Operating Minimum (Random Seeks to Fixed Disks)	
		L WAd (BELS)	6.1
		L pAm (dBA)	44

Technical Specifications

Smart Array P400 Controller	Disk Drive and Enclosure Interface	3G SAS (Serial Attached SCSI) 1.5G SATA (Serial Advanced Technology Attachment)
	SAS Connectors	2 internal (SFF8484) x4 wide port connectors
	Cache Memory Speed	DDR2-533MHz with 40 or 72-bit wide bus provides up to 4.2 GB/s maximum bandwidth.
	Server Interface	x8 2.5G PCIe provides 2GB/s maximum bandwidth.
	SAS Speed	x8 3G SAS provides 2.4GB/s maximum bandwidth.
	Cache Memory	40-bit 256MB cache (72-bit 512MB module upgrades available); ECC protection, battery-backed, and transportable
	Logical Drives Supported	Up to 32 logical drives
	Maximum Logical Drive Capacity	3TB (6 x 500GB)
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space
	RAID Support	RAID 6 with ADG (Advanced Data Guarding) requires Battery Backed Write Cache Upgrade RAID 5 (Distributed Data Guarding) RAID 1+0 (Striping & Mirroring) RAID 0 (Striping)

Smart Array E200 Controller	Disk Drive and Enclosure Interface	3G SAS (Serial Attached SCSI) 1.5G SATA (Serial Advanced Technology Attachment)
	SAS Connectors	2 internal (SFF8484) x4 wide port connectors
	Cache Memory Speed	DDR1-266 MHz provides up to 4.2 GB/s maximum bandwidth.
	Server Interface	x8 2.5G PCIe provides 2GB/s maximum bandwidth.
	SAS Speed	x8 3G SAS provides 2.4GB/s maximum bandwidth.
	Cache Memory	40-bit 64MB cache or a 128MB battery backed cache: ECC protection, battery-backed, and transportable
	Logical Volumes Supported	Up to 32 logical volumes
	Maximum Volume Capacity	3TB (6 x 500 GB)
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space
	RAID Support	RAID 5 (Distributed Data Guarding) RAID 1, 1+0 (Striping & Mirroring) RAID 0 (Striping)

Technical Specifications

Dual embedded NC373i Multifunction Server Adapters	Network Interface	10Base-T/100Base-TX/1000Base-TX	
	Compatibility	IEEE 802.3 10Base-T	
		IEEE 802.3ab 1000Base-T	
		IEEE 802.3u 100Base-TX	
	Data Transfer Method	PCI Express, four lanes (x4)	
	Network Transfer Rate	10Base-T (Half-Duplex)	10 Mb/s
		10Base-T (Full-Duplex)	20 Mb/s
		100Base-TX (Half-Duplex)	100 Mb/s
		100Base-TX (Full-Duplex)	200 Mb/s
		1000Base-TX (Half and Full-Duplex)	2000Mb/s
	Connector	Two RJ-45	
	Cable Support	10Base-T	Categories 3, 4 or 5 UTP; up to 328 ft (100 m)
		100Base-TX	Category 5 or higher UTP; up to 328 ft (100 m)
		1000BaseTX	Category 5 or higher UTP; up to 328 ft (100 m)

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For hard drives, 1 GB = 1 billion bytes. Actual formatted capacity is less.